

California Department of Fish & Wildlife  
575 Market Street, Suite 3700  
San Francisco, CA 94105  
[BWERcomments@wildlife.ca.gov](mailto:BWERcomments@wildlife.ca.gov)

REIR Scoping Comments  
“following a series of earthquakes”  
“the Los Angeles River outlet moved”  
Tom McMahon  
November 14, 2023

Attn: Ballona Wetlands Restoration Project –

<https://wildlife.ca.gov/Regions/5/Ballona-EIR#593493804-what-was-here-before-bwer>

**“CDFW decertified the EIR on September 28, 2023, and is now proceeding to revise the document as per the court order.”**

**“Frequently Asked Questions- What was here before BWER?”**

“Prior to 1825, the Los Angeles River flowed through the Ballona watershed and into the Ballona Lagoon. Following a period of several years of heavy rains and **a series of earthquakes, the Los Angeles River outlet moved** to its current location near San Pedro. The migration of the Los Angeles River had a significant impact on the form and function of the historic Ballona Wetlands.

After the Los Angeles River shifted to the south, the Ballona Wetlands became a coastal bar-built estuarine system with extensive tidally affected saltmarsh and brackish habitats that transitioned into a more alkaline/freshwater system approximately 1.5 miles inland from the coast. Without the inflow from the Los Angeles River, the wetlands were often closed to the ocean by a sand berm along the beach, causing perching of water within the lagoon wetlands. During wet weather periods when Ballona Creek stream flow discharge was high enough to overflow or scour a channel to the ocean, the Ballona Creek mouth was open to the ocean and experienced tidal influence until the sand berm reformed across the mouth of the creek.”

Dear BWER –

The ten references below record no earthquakes in the LA basin in the period from 1815 to 1825.

Only one event northwest of Santa Barbara is recorded in the U.S.G.S. database during that period (1821, not 1825):

yyyy	mm	dd	hhmmss	latitude	longitude	magnitude
<u>1821</u>	01	01	000000.000	34.5500000	-119.8500000	6.30

This is approximately 90 miles from Paseo de las Carretas and the ciénegas where El Río de Nuestra Señora la Reina de los Ángeles de Porciúncula is recorded to have dissipated during the period from 1815 until the Los Angeles Floods of 1825.



Please correct this website (i.e. omit the earthquake reference). See References below. I will get back to the year 1815 in a future comment.

Sincerely,

Tom McMahon, Engineer  
8207 Delgany Avenue  
Playa del Rey, CA 90293  
Hyperion@PN-Junction.Net  
+1-310-717-7208

CC:

Wildlife Conservation Board  
Jennifer Norris, Executive Director  
P.O. Box 944209575  
Sacramento, CA 94244-2090  
+1-(916) 445-8448  
[Jennifer.Norris@wildlife.ca.gov](mailto:Jennifer.Norris@wildlife.ca.gov)  
[WCBCorridors@wildlife.ca.gov](mailto:WCBCorridors@wildlife.ca.gov)

CDFW Headquarters  
Chuck Bonham  
715 P Street, Sacramento, CA 95814  
P.O. Box 944209  
Sacramento, CA 94244-2090  
+1-(916) 445-0411  
<https://wildlife.ca.gov/Contact>

## References:

### **Register of Earthquakes in California, from 1800 to 1863. OAC California.**

[https://oac.cdlib.org/view?docId=hb4w1006qc&chunk.id=div00001&brand=oac4&doc.view=entire\\_text](https://oac.cdlib.org/view?docId=hb4w1006qc&chunk.id=div00001&brand=oac4&doc.view=entire_text)

“From 1812 to 1850, the archives are silent on this subject. In the latter year our record began and has continued with little interruption to 1863, a period of thirteen years. Within that period there are but few earthquakes occurring north of the thirty-ninth parallel which have escaped notice and have not been made matter of record.”

**U.S.G.S: “A catalog of magnitude 4+ earthquakes from 1769 to 2012”, “Appendix H: U.S.G.S WGCEP Historical Earthquake Catalog, Appendix”, “K—The UCERF3 Earthquake Catalog, U.S.G.S.” [Santa Barbara record.]**

[https://pubs.usgs.gov/of/2013/1165/data/ofr2013-1165\\_EarthquakeCat.txt](https://pubs.usgs.gov/of/2013/1165/data/ofr2013-1165_EarthquakeCat.txt)

[https://pubs.usgs.gov/of/2013/1165/pdf/ofr2013-1165\\_appendixK.pdf](https://pubs.usgs.gov/of/2013/1165/pdf/ofr2013-1165_appendixK.pdf)

<https://pubs.usgs.gov/of/2007/1437/h/of2007-1437h.pdf>

### **California Department of Conservation Earthquake Catalogs**

<https://www.conservation.ca.gov/cgs/Pages/Earthquakes/earthquake-catalog.aspx>

### **List of Major Earthquakes in California - CA Earthquake History Timeline | California Earthquake Authority**

<https://www.earthquakeauthority.com/California-Earthquake-Risk/California-Earthquake-History-Timeline>

**California earthquake history. ANNALS OF GEOPHYSICS, VOL. 47, N. 2/3, April/June 2004**

[https://www.researchgate.net/publication/50301779\\_California\\_earthquake\\_history](https://www.researchgate.net/publication/50301779_California_earthquake_history)

### **Southern California Earthquake Data Center at Caltech**

<https://scedc.caltech.edu/earthquake/chronological.html>

### **California Earthquake Catalog 2017 U.S.G.S.**

<https://www.conservation.ca.gov/cgs/Documents/Earthquakes/California-earthquake-catalog-2017-M5.txt>

## List of earthquakes in California - Wikipedia

[https://en.wikipedia.org/wiki/List\\_of\\_earthquakes\\_in\\_California](https://en.wikipedia.org/wiki/List_of_earthquakes_in_California)